

REMARKS

In the Office Action the Examiner has rejected selected claims for being indefinite. The Examiner has also rejected claims for being anticipated by Batha et al. (U.S. Pat. No. 3,930,982: hereinafter "Batha"), and he has rejected others for being unpatentable over WO 00/22427 (hereinafter WO '427) in view of Batha or Herrick et al. (U.S. Pat. No. 5,282,942). The Examiner has further indicated that claims 17 and 18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In response, Applicant has amended claims 2 and 8 for the purpose of making these claims more definite. Further, Applicant has amended the independent claims 1, 12 and 16 to require the ferroelectric member be in a poled state for operation, and that the solution be pumped (claim 1) or manipulated (claims 12 and 16) along a fluid pathway. Independent claim 16 has been further amended to indicate that the solution flows in a direction parallel to an applied electric field. Support for these amendments is found in the specification on page 13 at lines 15-28.

The claims have been amended to improve their readability and to point out the features that more clearly define the structure and cooperation of structure of the present invention, and that distinguish this invention over the cited art. Reconsideration of the rejection of claims is respectfully requested in view of the above-recited amendments and arguments set forth below. Claims 1-19 remain pending.

Rejections under 35 U.S.C. § 112

Claims 2, 3 and 8-11 have been rejected under 35 U.S.C. § 112, second

paragraph, for being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, claim 2 has been rejected because the Examiner contends that the electrolyte solution can not be charged as claimed. Accordingly, Applicant has deleted words from claim 2 which inappropriately indicated that the electrolyte solution was to be charged. Claim 3, which depends from claim 2, also benefits from this amendment. Additionally, claims 8-11 have been rejected because the limitation of "a first electrode" in claim 8, implies the presence of similar, but not claimed, electrodes. Accordingly, Applicant has amended claim 8 as suggested by the Examiner to obviate any confusion. Claims 9-11 depend from claim 8 and they, therefore, also benefit from this amendment.

For the reasons set forth above, Applicant believes that the bases for rejecting claims under 35 U.S.C. § 112 have been overcome and the rejections should be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1, 2, 4, 6, 7 and 12 have been rejected under 35 U.S.C. § 102 for being anticipated by Batha.

Unlike the device now claimed in amended claims 1 and 12 for the present invention, the invention disclosed by Batha is neither a pump nor a device for manipulating a fluid. Although Batha discloses a device with a direction for fluid flow (i.e. arrows 25 (see col. 4 Ins 58-60 and Fig. 1), and arrows 48 (see col. 9 Ins 1013 and Fig. 18, 20 and 21)), fluid flow through the Batha device does not result from the effects of a disclosed ferroelectric material. Instead, the ferroelectric material

disclosed by Batha is used for the removal of particulates from a solution, which may or may not be flowing through the device. Nowhere in its disclosure does Batha either teach or suggest the operation of a ferroelectric material, in combination with an electric field that is generated by other means, for the purpose of pumping or manipulating an electrolyte solution along a fluid pathway as now recited in claims 1 and 12.

Claims 2, 4, 6 and 7 depend either directly or indirectly from claim 1. Accordingly, they are distinguishable from the invention disclosed by Batha for the same reasons set forth above with regard to claim 1.

For the reasons set forth above, Applicant believes the bases for rejecting claims for being anticipated by Batha have been overcome and the rejections should be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1-14, 16 and 19 have been rejected under 35 U.S.C. § 103 for being unpatentable over WO '427 in view of Batha. Also, claim 15 has been rejected under 35 U.S.C. § 103 for being unpatentable over WO '427 in view of Batha, and further in view of Herrick et al. (U.S. Pat. No. 5,282,942).

Unlike the disclosure of WO '427, independent claims 1, 12 and 16 all require the use of a ferroelectric material. Further, as now required by all of the amended independent claims 1, 12 and 16, this ferroelectric material is used in a "spontaneous poled state". This requirement for the present invention is clear. Specifically, the inherent property of a ferroelectric material, namely; its ability to maintain an uninfluenced electrical polarization, is realized when pumping a solution (claim 1), or

manipulating a solution (claims 12 and 16). Stated differently, once in a "poled state" the ferroelectric material claimed for the present invention requires no further stimulus by an external source for its electrical polarization. The conductors disclosed in WO '427 do not have this capability. Instead, and quite unlike the claim requirements for the present invention, the conductors disclosed in WO '427 must be supplied with suitable voltages for their operation (see p. 10, Ins 35-38).

As for the combined teaching of Batha and WO '427, there is no disclosure in either Batha or WO '427 that teaches or suggests their respective disclosures should be considered in combination. Specifically, as noted above, Batha does not pertain to devices for moving a fluid (e.g. a pump). On the other hand, WO '427 does not consider the use of a ferroelectric material or the implementation of the inherent properties of such a material for moving a fluid. The Herrick reference does not cure these deficiencies. Further, all of the pending dependent claims depend directly or indirectly from one of the independent claims 1, 12 or 16, and, therefore, benefit from their respective limitations.


For the reasons set forth above, Applicant believes the claims for the present invention are distinguishable from all of the cited references taken either individually or collectively. Accordingly, Applicant believes the bases for rejecting claims for being unpatentable have been overcome and should be withdrawn.

The references cited by the Examiner, but not relied on for the rejection of claims, have been noted.

In conclusion, Applicant respectfully asserts that claims 1-19 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 619-688-1300 for any reason that would advance the instant application to issue.

Dated this 16th day of January, 2004.

Respectfully submitted,


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